Massachusetts Department of Public Health (MDPH)
Division of Epidemiology and Immunization

Measles Alert
Updated May 26, 2006
Six Measles Cases Now Confirmed in Massachusetts

This advisory updates information from an earlier *Measles Alert,* dated May 12, 2006. Six laboratory confirmed cases of measles have now been identified in Massachusetts. The index case occurred in a 32 year old unvaccinated man who arrived from India on April 26, 2006. To date, 3 additional cases have been identified in U.S.-born individuals who work at the same firm (Investors Bank and Trust Company) which is located at the John Hancock tower in Boston. All 4 of these cases have been confirmed at the Massachusetts State Laboratory Institute (MA SLI). Several more cases of febrile rash illness are still under investigation.

All 5 of these secondary cases are U.S.-born, have an unknown vaccination history and their rash onsets range from May 13th through May 20th. Four of these cases work on the same floor as the index case. One case works on a different floor, but in the same company. The cases live in the extended metropolitan area surrounding Boston.

State and local health departments are working to identify contacts of all cases and ensure that they are immune. Immunization clinics are being held at the work site. MMR vaccine and immune globulin are being made available to health care facilities and providers to help decrease transmission of this highly infectious disease.

MDPH is asking providers to:

- **Carefully assess all patients presenting with febrile rash illnesses and report such cases to their local Board of Health and the MDPH at 617-983-6800. AND**
- **Ensure that all staff and patients are up-to-date with their measles, mumps, rubella (MMR) immunizations.**
  - **All children ≥ 12 months of age are encouraged to get their 1st dose of MMR vaccine as soon as possible.**
  - **All individuals born in and after 1957 should have 2 doses of MMR vaccine (regardless of country of birth).**
  - **Individuals born in the U.S. before 1957 are usually considered immune – but, they may wish to receive 1 dose of MMR vaccine to increase their likelihood of protection against measles. (Exception: Healthcare workers born before 1957 should have 1 dose of MMR vaccine.)**
  - **Individuals born outside the U.S. before 1957 should also have 1 dose of MMR.**

Measles

Presentation. Measles is caused by the measles virus (genus *Morbillivirus*, family *Paramyxoviridae*). Measles is an acute disease characterized by fever as high as 103–105ºF, cough, conjunctivitis, coryza, an erythematous maculopapular rash, and mouth lesions (Koplik spots) which are characteristic, but not always present. The measles rash is a maculopapular eruption that often begins on the face, spreads to the trunk and extremities, becomes confluent and lasts 5–6 days. Other symptoms of measles include loss of appetite, diarrhea (especially in infants), and generalized lymphadenopathy.

Complications. Complications of measles include: otitis media, pneumonia, laryngotracheobronchitis (croup), encephalitis (approximately 5–10 per 10,000), seizures with or without fever (6–7 per 1,000), and death (approximately 1–3 per 1,000), mostly from pneumonia and occasionally from encephalitis. As with other complications, the risk of death is higher in younger children, older adults, individuals with immunosuppression and pregnant women.

Incubation Period, Infectious Period and Transmission. The average incubation period from exposure to rash onset is 14 days (range 7-18 days). Measles is the **most** infectious human disease. Infectious particles can remain suspended in the air for up to 2 hours. The infectious period is from 4 days before to 4 days after rash onset (counting the rash onset as day zero). Measles is transmitted from person-to-person by droplet, direct contact and the airborne route.

Diagnosis. Measles should be suspected in all individuals presenting with febrile rash illness. It is extremely important to obtain laboratory confirmation for suspect cases of measles. Please submit serum to the MA SLI for measles IgM antibody testing (since there can be problems with the sensitivity and specificity of some commercially available IgM antibody tests) and clinical specimens for viral isolation to the MA SLI, as well**.**

- **Measles IgM Antibody Test**. Obtain 2 mL of serum when the patient presents for medical evaluation, regardless of time since rash onset. (However, if it is < 3 days since rash onset, repeat testing may be requested.)

(over)

(Diagnosis, cont.)

- **Viral Isolation.** Throat (oropharyngeal or nasopharyngeal) swabs and urine are also needed to determine the origin of the virus.

Please contact an MDPH epidemiologist (24 hours a day, 7 days a week) at 617-983-6800 or 888-658-2850 for technical guidance on the collection of specimens, necessary paperwork and to arrange for submission by courier to the MA SLI.

Immunity. Determination of immunity in those without symptoms of measles can be done in many clinical and commercial laboratories and is an IgG test.

Initial Management of Patients with Febrile Rash Illness

- Assess and screen all patients with febrile rash illness, either prior to or immediately on arrival at the intake area.
- Escort patients to a separate waiting area or place immediately in a private room.
- Both patients and staff should wear appropriate masks/respirators (masks for patients to prevent generation of droplets, and respirators for staff, if possible, to filter out airborne particles).
- If not admitted, maintain standard and airborne infection isolation (including while patient is exiting the facility; e.g., separate exit). Patients should receive instructions to remain in isolation at home through four days after rash onset.
- Measles virus can remain suspended in the air for up to 2 hours. Therefore, we recommend that the room occupied by a suspect case not be used for 2 hours following the case's exit.

Other Control Measures

- **Identify** all contacts among patients and staff exposed to the suspect case.
  This includes: 1) patients and families in the waiting and examination rooms up to 2 hours after index case was present; 2) all staff both with and without direct patient contact; 3) due to measles airborne route of transmission, we often need to consider everyone at the entire facility exposed.
- **Assess** the exposed for acceptable evidence of immunity as outlined in the table below.

Acceptable Evidence of Immunity
1. Born in the U.S. before January 1, 1957 (the exception to this is those working in health care settings, where year of birth does **not** constitute acceptable proof of immunity); or
2. Two doses of measles-containing vaccine, given at least 4 weeks apart and beginning at ≥12 months of age, and the 2nd dose given prior to or within 72 hours of exposure. (In most situations, individuals receiving their first dose within 72 hours of exposure will be considered immune); or
3. Serologic proof of immunity (IgG test performed in a licensed clinical or commercial laboratory.).
Additionally, please note that: - Foreign-born individuals must have documentation of immunization or serologic proof of immunity. "Born before 1957" is not acceptable for this group.
- Physician-diagnosed disease alone is **not** acceptable for any group.

- **Vaccinate** all susceptibles.
  Measles vaccine given within 72 hours of exposure can prevent disease. This is one of the most important control measures.
- **Exclude** all susceptible staff (who did not receive MMR vaccine within 72 hours of exposure) from work on days 5-21 after exposure.
- **Surveillance** for early identification of secondary cases for 2 incubation periods (28 days)

Similar control measures are also needed in schools and other settings. Please see the measles chapter in the MDPH document *Guide to Surveillance and Reporting* which can be found on the department's website http://www.mass.gov/dph/cdc/gsrman/gsr.htm

Reporting

Please report all cases or suspect cases of measles to your local board of health and to the MDPH Division of Epidemiology and Immunization at 617-983-6800. Cases diagnosed in Boston should be reported to the Boston Public Health Commission at 617-534-5611 .

MMR Vaccine Availability

State-supplied vaccine may be used for the following groups: 1) all children 12 months through 18 years of age; 2) persons in institutions or facilities experiencing an outbreak; 3) adults at risk seen at public provider sites; and 4) all college students.

Please call MDPH at 617-983-6800 or 888-658-2850 if you have any questions about vaccine availability or management of suspect cases of measles.